

# **AFCI University Fellowship Program**

**Cathy Dixon** 



# **AFCI Objectives**

### **Promote academic opportunities**

- Highly motivated students
- Nuclear science and engineering

### Strengthen the academic and research infrastructure

• Maintain and advance nuclear and accelerator science, engineering and technology

## Engage creative academic talent in research areas

Support the R&D plan of the AFCI program

Strengthen relationships among universities and DOE laboratories



# Reaching the Right Audience

Department heads at U.S. universities with reactors, accelerators, or NE degree programs

- Nuclear engineering
- Mechanical engineering
- Chemical engineering
- Physics
- Chemistry

#### **HBCU-MIs**

Degrees in relevant technical areas

Individuals at universities (active in accelerator research)

### ANS

- President
- Local sections
- Student chapters



# **Selection Process**

# **URA** reviews applications

- Checks for compliance with the intent of the solicitation
- Ranks the applications to facilitate the review

DOE, AFCI laboratory staff rank applications

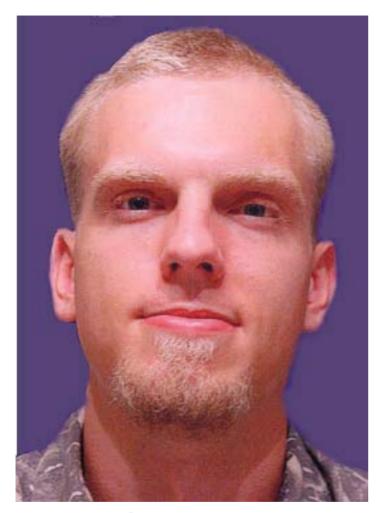
**Recommendations to DOE** 

Selection of fellows and alternates





Back Row: Lee Van Duyn, ME - Georgia Tech; Will Wieselquist, R Ph - North Carolina State, Thomas Carter, NE - University of Florida (ANL-E intern); Frank Szakaly, N&RE - Texas A&M (ORNL intern); Front Row: Lisa Cordova, NE - University of New Mexico (SNL intern); Jennifer Ladd, CE - University of Tennessee-Knoxville (ORNL intern); Matt Sowa, NE - University of Michigan; Not Pictured: Billy Rothstein, NE - University of Illinois-Urbana-Champaign (ANL-E intern), and Michael Gregson, NE - University of Texas.



Michael Gregson
University of Texas
Nuclear Engineering



Billy Rothstein
University of Illinois-Urbana/Champaign
Nuclear Engineering

# 2002 AFCI Fellows Thesis Topics

Tom Carter - Feasibility of Mixed Carbide Fuels for Use in Transmutation Systems

**Lisa Cordova -** An Investigation of the Angular and Spatial Spreading of a Relativistic Proton Beam in a High Z Target, Like Tungsten

Michael Gregson - Review of Target Materials for Accelerator Transmutation of Waste (ATW) Systems

**Jennifer Ladd** - Separation of Residual Fluorinated Slag Containing Transuranium and Fission Products

Billy Rothstein - The Effect of Irradiation on Neutron Super Mirrors

Matt Sowa - Investigation of Pyrochlore and Zirconia as Inert Matrix Target Materials for Transmuting Transuranics

**Frank Szakaly** - Study of Nitride Fuels for Use in Fast Reactors for the Purpose of Waste Minimization and Waste Transmutation

**Lee Van Duyn -** Evaluation of a Non-Fertile Metal-Matrix Dispersion Fuel for Use in Plutonium Burning Light Water Reactors

Will Wieselquist - Investigation of the Impact of Specific Cross-Sections' Uncertainties on AAA Nuclear Fuel



# **Meeting Our Objectives**

## **Promoting Academic opportunities**

- 14 students actively in the AFCI program
- 5 masters degrees
- 3 theses completed, 3 theses near completion

### Strengthening the academic and research infrastructure

• Relationships with students at 15 universities

## Engage creative academic talent in research areas

• Average GPA - 3.69

### Strengthen relationships among universities and DOE Labs

- 9 students with national laboratory experience
- 6 National Laboratory collaborations (Los Alamos, Argonne East, Argonne West, Lawrence Livermore, Oak Ridge, Sandia)



# **Developing THE AFCI Program**

- Attention to details
- Professional management with a personal touch
- Special opportunities
- Evaluations and refinements

